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Job Analysis

Job Title	Lead Software Developer – Info. & Comm. Technology Dept.	Worker	
DOT Number	030.062-010	Claim Number	
Employer	Port of Seattle	Employer Phone #	(206) 787-3000
Employer Contact	Ed Goodman, Development Manager and Enterprise Services Manager	Date of Analysis	November 2, 2011

☒ Job of Injury   ☐ Previous Job   ☐ New Job   ☒ 37.5 Hours Per Week[1]   ☒ 5 Days Per Week

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Job Description, Essential Functions, Tasks and Skills:

The Port of Seattle is a municipal corporation created on September 5, 1911 by the voters of King County. The Port of Seattle is divided into operating divisions, plus other departments that support the divisions and the broad mission of the Port: 1) Aviation Division, 2) Capital Development Division, 3) Real Estate Division, and 4) Seaport Division.

This job analysis was developed specifically for the position of <u>Lead Software Developer</u> in the Port of Seattle Information & Communications Technology Department. Individuals in this position typically work in the office building located at Pier 66. On occasion, Lead Software Developers will attend off-site meetings.

Essential Functions:
The Lead Software Developers in the Information & Communications Technology Department lead the delivery and support of custom software solutions developed for Port staff and its customers. In addition, Developers are involved in the evaluation of third- party technology solutions, and lead the efforts to integrate third-party solutions purchased by the Port.

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[1] The Lead Software Developer position is generally project based work. Therefore, work hours can increase around project deadlines and application releases.

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Tasks Assigned to the Lead Software Developer:

- Provide technical and resource leadership within an assigned development area as Development Area Lead.
- Lead the design, coding, testing, debugging, and documentation of programs using current technologies (ex. Java/J2EE and C#).
- Lead the development environment, Port architecture, and software development methodologies.
- Provide project leadership by planning project timelines, tracking spend rates, identifying and solving issues, providing status reports, coordinating delivery, and leading lessons learned meetings. May do this working with an assigned project manager, or as the principal project manager for the project.

- Support and troubleshoot production systems by coordinating with Service Desk, Systems Engineers, Electrical Technicians, Port of Seattle Information Technology Leadership, Customers, and other stakeholders.
- Foster and maintain good relationships with customers working on requirements, Request For Proposals, solving application issues, making sure that the needs of the customers are being met etc.
- Provide project/effort business analysis leadership by working with the clients to understand and document their business needs. May do this working with an assigned business analyst or as the principal business analyst on a project/effort.
- Develop proposals and estimates for new Department efforts that improve Information & Communication Technology architecture and/or provide new business solutions. May do this as the principal proposal author or working with another assigned author.

- Research, document, and present on topics that will improve Department technology architecture, address current technology problems, or improve the techniques used to deliver solutions.
- Work with vendor area leads to identify and resolve errors, flaws, or faults in software utilized by the
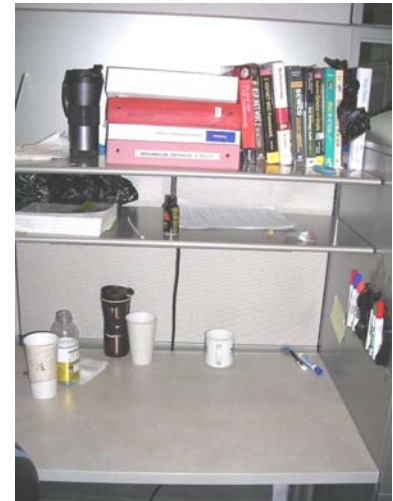
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Port that produces an incorrect or unexpected result, or causes the software to behave in unintended ways. Lead Software Developers act as the liaison to allow outside vendor software to work with and support Port software.

- Provide support for existing processes and technology solutions used throughout the business area in conjunction with IT technical resource.

Skills, Traits, Knowledge and Abilities Required of the Lead Software Developer:

- Expert knowledge of computing architectures and environments (e.g. N-Tier web applications).
- Expert knowledge of current technologies and tools (Java, C#, and good knowledge of software development methodologies and lifecycles).
- Knowledge of WebSphere and IIS.
- Excellent oral and written communication skills.
- Strong problem solving skills.
- Ability to work independently or in a group. Possess strong leadership and mentoring skills.
- Strong human relations skills to interface with various levels of internal and external customers, management, and staff.
- Ability to work with customer to understand document and build solutions based on business processes.
- Ability to model the business domain in software code.
- Ability to develop and maintain systems using: C#, Java, SQL, JDBC, ADO.Net, ASP.Net, SQL, MS SQL, JEE, XML, Javascript, CSS, and HTML.
- Ability to produce clear concise documentation to provide to support the creation and maintenance of technology assets, and provide to teams that will directly support the developed software system.
- Ability to understand testing fundamentals.
- Able to prioritize work with an appreciation and understanding of organizational drivers, mission, critical objectives and budgetary expectation.
- Demonstrate ability to provide leadership to successfully complete projects of various levels of difficulty and duration.
- Strong knowledge of overall planning, implementation, and infrastructure methodologies needed to complete projects, including estimating and budget methodologies, basic project planning, tracking, and scheduling, mitigation, and resource management.
- Experience managing implementations in a dynamic and highly integrated organization.
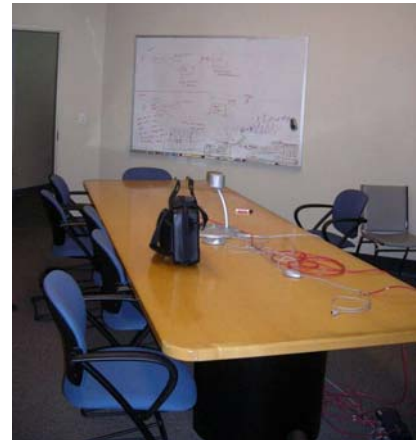
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Machinery, Tools, Equipment, Personal Protective Equipment:
A Lead Software Developer uses a variety of items to complete
assigned tasks.

- Windows-based desktop computers and associated
  accessories, such as monitors, keyboards and mice. Computer
  hard drives, docking systems, scanner, and printers.
- Software applications such as Microsoft Office applications,
  SharePoint, PeopleSoft, Internet Explorer, and various other
  project management and software development software.
- Other office machines, including fax machine, portable
  projector, document shredder, and calculator.
- Specific devices for which software is being
  developed/designed (i.e. iPad2).
- Multi-line telephone. Headphone for telephone. Cellular
  phone.
- General office supplies, including binders, file folders, pens
  and pencils, boxes, manuals, books, notepads, stapler,
  document organizers, and compact disks.
- General office equipment, such as desks, chairs, file cabinets,
  conference room tables, shelves, and other items.
- Vehicles. On rare occasions, the worker may use a Port of
  Seattle vehicle to attend an off-site training or meetings.
- Hand/wheeled cart.
- Whiteboards.

Supplies are stored in a cabinet or on shelves, and reams of paper
are generally stored in boxes on the floor near the
printer/fax/scanner.

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Education / Training

Minimum Experience and Education:
- 5 years of Software development experience with some experience as a lead developer.
- Proficiency leading and overseeing the delivery of software solutions.
- 4 year Degree in Computer Science or equivalent experience.

Preferred Experience and Education:
- 10 years Software development with the majority of this experience as a lead software developer.
- Proficiency leading and overseeing the delivery of software solutions.
- Masters Degree in Computer Science or equivalent experience.
- Sun Java Certification and/or MCSD/MCAD.

Per the Dictionary of Occupational Titles (DOT): 030.062-010 Software Engineer
Specific Vocational Preparation: 8 (Highly Skilled - From four to ten years)

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COGNITIVE AND BEHAVIORAL ELEMENTS/DEMANDS

Frequency Definitions:	
Continuously = Occurs 66-100% of the time. **Occasionally** = Occurs 1-33% of the time **Frequently** = Occurs 33-66% of the time. **Rarely** = May occur less than 1% of the time. **Never** = Does not ever occur.	
Comprehension	
Articulating and comprehending information in conversations.	Frequently
Reading, comprehending, and using written materials.	Continuously
Understanding and solving problems involving math and using the results.	Continuously
Using technology/instruments/tools & information systems.	Continuously
Working with two and three dimensional formats.	Occasionally
Remembering	
Remembering spoken instructions.	Continuously
Remembering written instructions.	Continuously
Remembering visual information.	Continuously
Recalling information incidental to task at hand.	Continuously
Memorizing facts or sequences.	Continuously
Remembering simple instructions.	Continuously
Remembering detailed instructions.	Continuously
Learning & Processing	
Effectively learning and mastering information from classroom training.	Occasionally
Effectively learning and mastering information from on-the-job training.	Continuously
Learning from past directions, observations, and/or mistakes.	Continuously
Using common sense in routine decision making.	Continuously
Recognizing and anticipating potential hazards and taking precautions.	Continuously
Thinking critically and making sound decisions.	Continuously
Integrating ideas and data for complex decisions.	Continuously
Determining and following precise sequences.	Continuously
Coordinating and compiling data and information.	Continuously
Analyzing, synthesizing data and information.	Continuously
Tasking and Planning	
Performing repetitive or short-cycle work.	Occasionally
Working under specific instructions.	Continuously
Completing complex tasks.	Continuously
Directing, controlling, or planning for others as necessary for basic tasks.	Occasionally
Directing, controlling, or planning for others as necessary for complex tasks.	Occasionally
Multi-tasking.	Frequently
Planning, prioritizing, and structuring daily activities.	Continuously

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Use Appropriate Behavior for Professional Work Environment	
Receiving criticism and accepting limits appropriately.	Occasionally
Maintaining emotional control and organization under increased stress.	Continuously
Maintaining socially appropriate affect, temperament, and behavior.	Continuously
Monitoring own quality of performance and altering behaviors to correct mistakes or improve outcome.	Continuously
Working independently and/or unsupervised.	Continuously
Adapting to frequent interruptions, changes in priorities, or changes in work location.	Continuously
Responding effectively to emergency situations.	Rarely

Frequency Designations: **Required Beneficial Not Necessary**	
Maintaining Attendance and An Assigned Work Schedule	
Maintaining predictable and reliable attendance each work shift.	Beneficial
Being punctual.	Beneficial
Taking rest periods at set times or only at times determined by breaks in job responsibilities.	Not Necessary
Adjusting to a flexible schedule of work days and or shifts.	Beneficial

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PHYSICAL DEMANDS

N/A: Not Applicable   **F:** Frequent (30%-66% of the time)
S: Seldom (1-10% of the time)   **C:** Constant (Over 66% of the time)
O: Occasional (10-33% of the time)   **WNL:** Within Normal Limits (talking, hearing, etc.)
STRENGTH: ☒ Sedentary   ☒ Light   ☐ Medium   ☐ Heavy   ☐ Very Heavy

	Frequency	Comments
Sitting	C	While working on a computer, talking on the phone, reading books/manuals/documents, installing, troubleshooting, or developing computer software, preparing or manipulating various electronic documents related to project management and software creation/troubleshooting duties, writing on whiteboard, writing notes and sketching, maintaining servers, participating in meetings, and while on breaks. On rare occasions, while driving a vehicle to attend off-site meetings or training.
Standing	O	Interchanged with Sitting and Walking. While gathering/storing items not reachable while seated, picking up print-outs, shredding documents, monitoring programs, talking on the phone or in person with supervisors and others, writing on whiteboard, troubleshooting/installing/setting up various pieces of equipment and servers.
Walking	O	Interchanged with Sitting and Standing. Primarily while walking in the immediate office area. Worker may walk to printer, shredder, various servers and monitors, meeting room, kitchen area, to talk to supervisors and others, to gather/deliver files, supplies, or materials from co-workers, other departments or storage areas.
Lifting (up to 10 pounds)	F	Lifting documents, files, folders, manuals, books, and binders, telephone receiver, cellular telephone, various power and connection cords, laptop computer (approx. 8 pounds), laptop docking station, various computer components and accessories such as iPad2 (approx. 3 pounds), portable projector (approx. 8 pounds), office supplies, and one or two reams of copy paper (5 pounds each).
Lifting (10 to 30 pounds)	S	Lifting/storing/retrieving larger sets of documents, manuals, books, in the immediate work and storage areas. Lifting various computer components, accessories, devices, and computer towers (approx. 30 lbs.) Note: It was indicated that Lead Software Developers may assist in moving computer towers and systems approx. once a year. If needed, workers can get assistance from co-workers.
Carrying (up to 10 pounds)	F	Carrying documents, files, folders, manuals, books, and binders, cellular telephone, various power and connection cords, laptop computer (approx. 8 pounds), laptop docking station, various computer components and accessories (such as iPad2, approx. 3 pounds), portable projector (approx. 8 pounds), office supplies, and one or two reams of copy paper (5 pounds each).

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Carrying (10 to 30 pounds)	**S**	**Carrying/storing/retrieving larger sets of documents, manuals, books, in the immediate work and storage areas. Carrying various computer components, accessories, devices, and computer towers (approx. 30 lbs.) Note: It was indicated that Lead Software Developers may assist in moving computer towers and systems approximately once a year. If needed, workers can get assistance from co-workers, and wheeled carts and hand trucks are also available to assist in moving items.**
Pushing/Pulling (up to 15 pounds of force)	**O**	**Opening file drawers (approx. 5-10 lbs. of force), opening covers on covered shelves, opening cabinets, gathering supplies, writing on and clearing whiteboard, and moving computers and computer related components, accessories, or devices. Opening or closing work cubical privacy door or various office doors. Pushing/pulling wheeled carts.**
Climbing Stairs	**S**	**Elevators and stairs are available to reach work, meeting, and or training areas.**
Bending at Waist	**O**	**While gathering items on desk, or gathering/storing items or supplies in storage areas at or below waist level. Accessing computer towers, servers, cords, and connections, located at or below waist level.**
Bending Neck	**C**	**Working with computers, computer accessories or devices, reviewing documents, reading various materials, processing files and paperwork, talking on phone, using whiteboard, participating in meetings, talking to co-workers, shredding documents, setting up and disassembling computers, and gathering supplies.**
Crouching/Kneeling	**S**	**Potentially while gathering supplies/other items stored in areas located below waist level such as in lower file drawers and at floor level. Accessing computer towers, servers, cords, and connections, located on lower shelves or at floor level.**
Twisting at Waist	**O**	**Reaching for and storing items located on desk, desk drawers, in file cabinets, or on shelves, utilizing whiteboard, and talking with co-workers. Setting up, disassembling, or accessing computer towers, monitors, servers, cords, and connections, located in hard to reach areas. Worker can minimize twisting by moving feet or moving and rotating chair while working.**
Stooping	**N/A**	
Driving	**S**	**Limited. Rarely may drive to off-site training.**
Foot Controls	**S**	**Limited. Rarely may drive to off-site training.**
Reaching (up to shoulder level)	**O**	**Dialing phone, gathering/returning items on desk, and gathering/storing folders, files, supplies, books, manuals, documents, and binders at or below shoulder level. Inserting documents into shredder. Using computer mouse. Setting up and disassembling servers, computer towers, and computer accessories. Using whiteboards, setting up portable projectors, distributing meeting material. Opening or closing work cubical privacy door or various office doors. Pushing/pulling wheeled carts.**
Reaching (over shoulder level)	**S**	**Retrieving /storing items, supplies, folders, files, books, manuals, documents, and binders while seated at desk, or where shelves/ other storage areas are above shoulder height. Using whiteboard.**

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Repetitive Motion	**O**	Typing code, entering large amounts of data into a computer, and or if sorting/processing large volume of documents. Generally, breaks can be taken on a regular basis to limit the amount of repetitive motion.			
Handling/Grasping	**C**	**60**	% Pinch Grasp	**40**	% Whole Hand Grasp
Fine Finger Manipulation	**F**	Writing, using computer mouse, processing paperwork, using office equipment, and dialing telephones.			
Keyboarding	**F**	Entering data into computer, preparing emails, letters, memos, budget, and other documents and reports. Note: The amount of keyboarding will be impacted by the number of meetings a Developer is scheduled to attend.			
Talking	**F**	Communicating with supervisors, co-workers, and other internal and external customers/stakeholders.			
Hearing	**F**	Communicating with supervisors, co-workers, and other internal and external customers/stakeholders. Listening to computers and various computer components when troubleshooting or performing basic software installation.			
Seeing	**C**	Would be considered important in this position.			
Writing	**S**	Taking notes or sketching while on the phone, talking with other individuals, or participating in meetings or training sessions. Writing on a whiteboard.			
Expected Environmental Conditions	**C**	Work is performed inside a temperature-controlled office environment. Workers may attend meetings or off-site trainings, which may expose the worker to outside weather conditions or moving vehicles.			
Normal Job Site Hazards	**C**	Limited – work is performed in an office environment.			

The above job analysis represents the requirements of a specific job based on personal observations, discussions with employer representatives, and/or workers. On occasion, practicality and feasibility prevent the direct observation and/or gathering of objective quantifiable data. For this reason, a "best estimate" may have been used when reporting physical demand frequencies.

Analysis was done on the job site? ☒ Yes ☐ No

Job Analysis Reviewed By:	Ed Goodman, Development Manager and Enterprise Services Manager

Completed by Vocational Provider   Kelly Schuelke, B.S., CDMS

Date   **November 2, 2011**   Signature of Vocational Provider

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FOR PHYSICIAN'S/EVALUATOR'S USE ONLY

☐ The injured worker can perform the physical activities described in the job analysis and can return to work on _____

☐ The injured worker can perform the physical activities described in the job analysis on a part-time basis for _____ hours per day. The worker can be expected to progress to regular duties in _____ weeks/months.

☐ The injured worker can perform the described job, but only with the modifications/ restrictions in the attached report and/or listed below. These modifications/restrictions are (check one):
　☐ Temporary for _____ weeks _____ months
　☐ Permanent

☐ The injured worker cannot perform the physical activities described in the job analysis based on the physical limitations in the attached report and/or listed below. These limitations are (check one):
　☐ Temporary for _____ weeks _____ months
　☐ Permanent

COMMENTS:

Date _____ Physician's/Evaluator's Signature _____

Physician's/Evaluator's Name Printed _____

PLEASE RETURN COMPLETED FORM VIA FACSIMILE TO:

Port of Seattle Employee Health & Safety Department at (206) 787-3406